FIG. 1 PRIOR ART

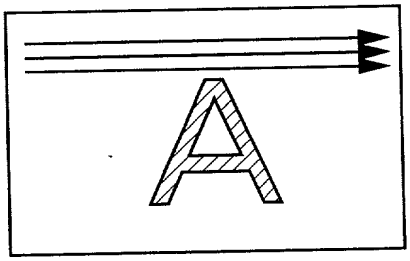

FIG. 2 PRIOR ART

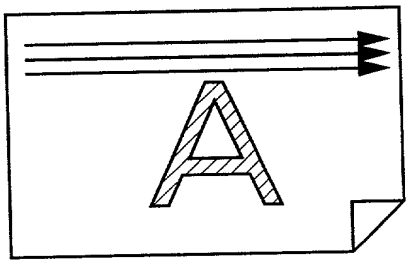

FIG. 3 PRIOR ART

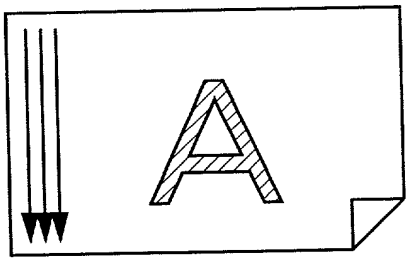

FIG. 4

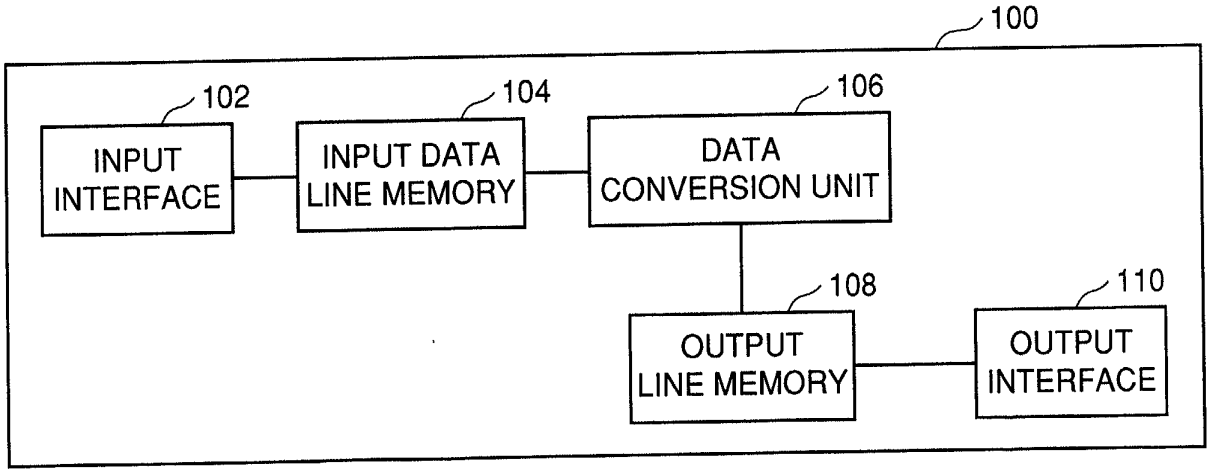
100
102
INPUT INTERFACE
104
INPUT DATA LINE MEMORY
106
DATA CONVERSION UNIT
108
OUTPUT LINE MEMORY
110
OUTPUT INTERFACE

FIG. 5

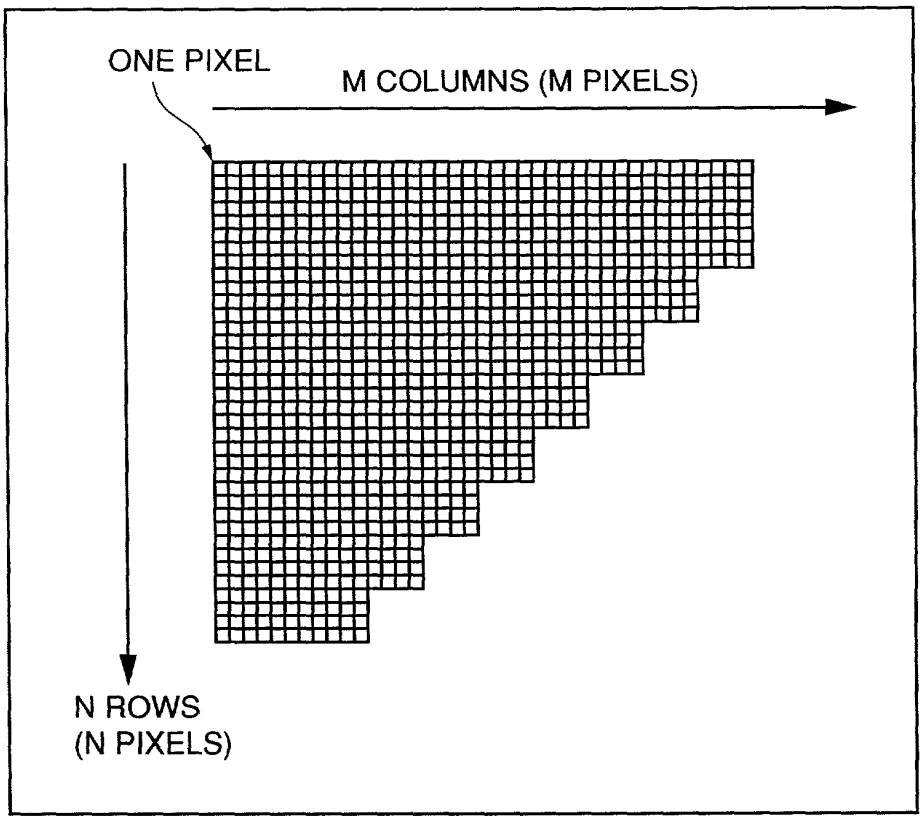

FIG. 6

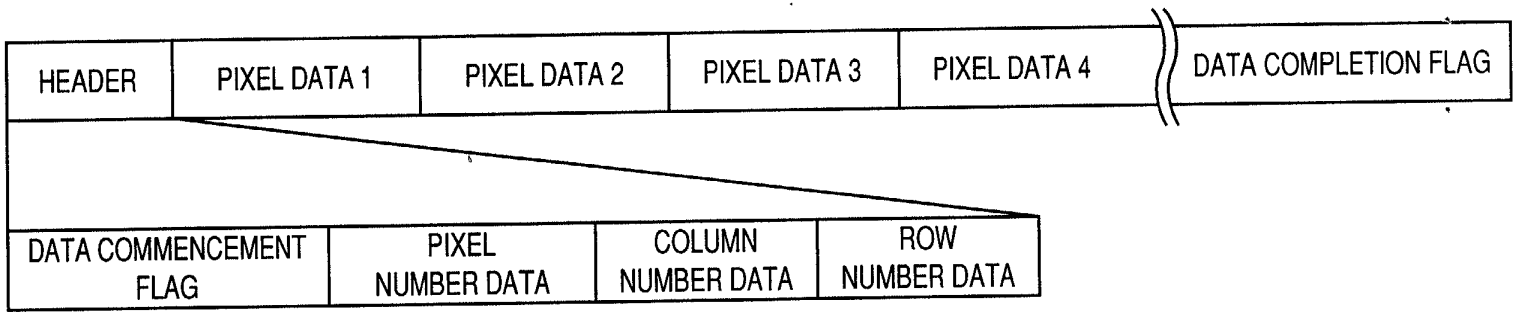
HEADER
PIXEL DATA 1
PIXEL DATA 2
PIXEL DATA 3
PIXEL DATA 4
DATA COMPLETION FLAG
DATA COMMENCEMENT FLAG
PIXEL NUMBER DATA
COLUMN NUMBER DATA
ROW NUMBER DATA

FIG. 7

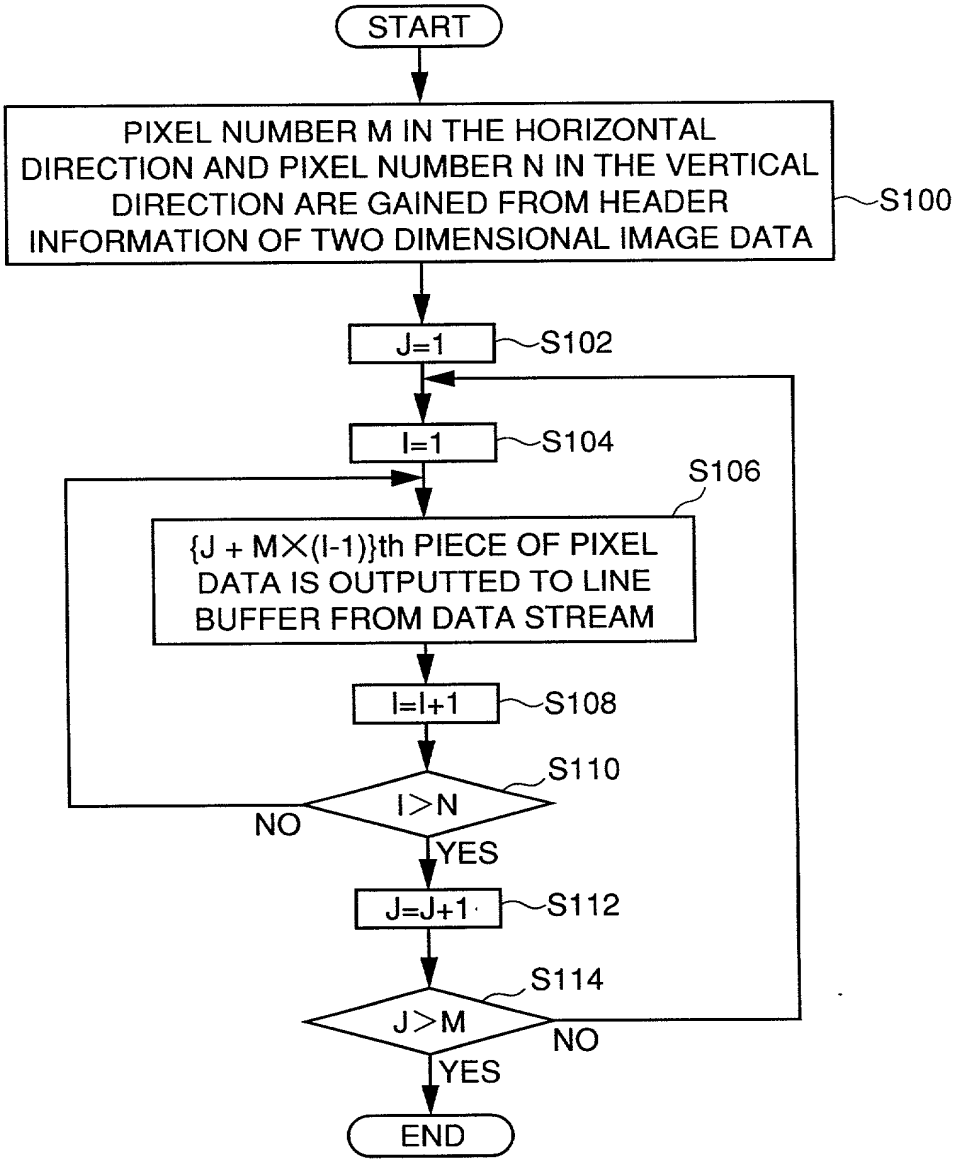
START
PIXEL NUMBER M IN THE HORIZONTAL DIRECTION AND PIXEL NUMBER N IN THE VERTICAL DIRECTION ARE GAINED FROM HEADER INFORMATION OF TWO DIMENSIONAL IMAGE DATA
S100
J=1
S102
I=1
S104
S106
{J + M×(I-1)}th PIECE OF PIXEL DATA IS OUTPUTTED TO LINE BUFFER FROM DATA STREAM
I=I+1
S108
S110
I>N
NO
YES
J=J+1
S112
S114
J>M
NO
YES
END

FIG. 8

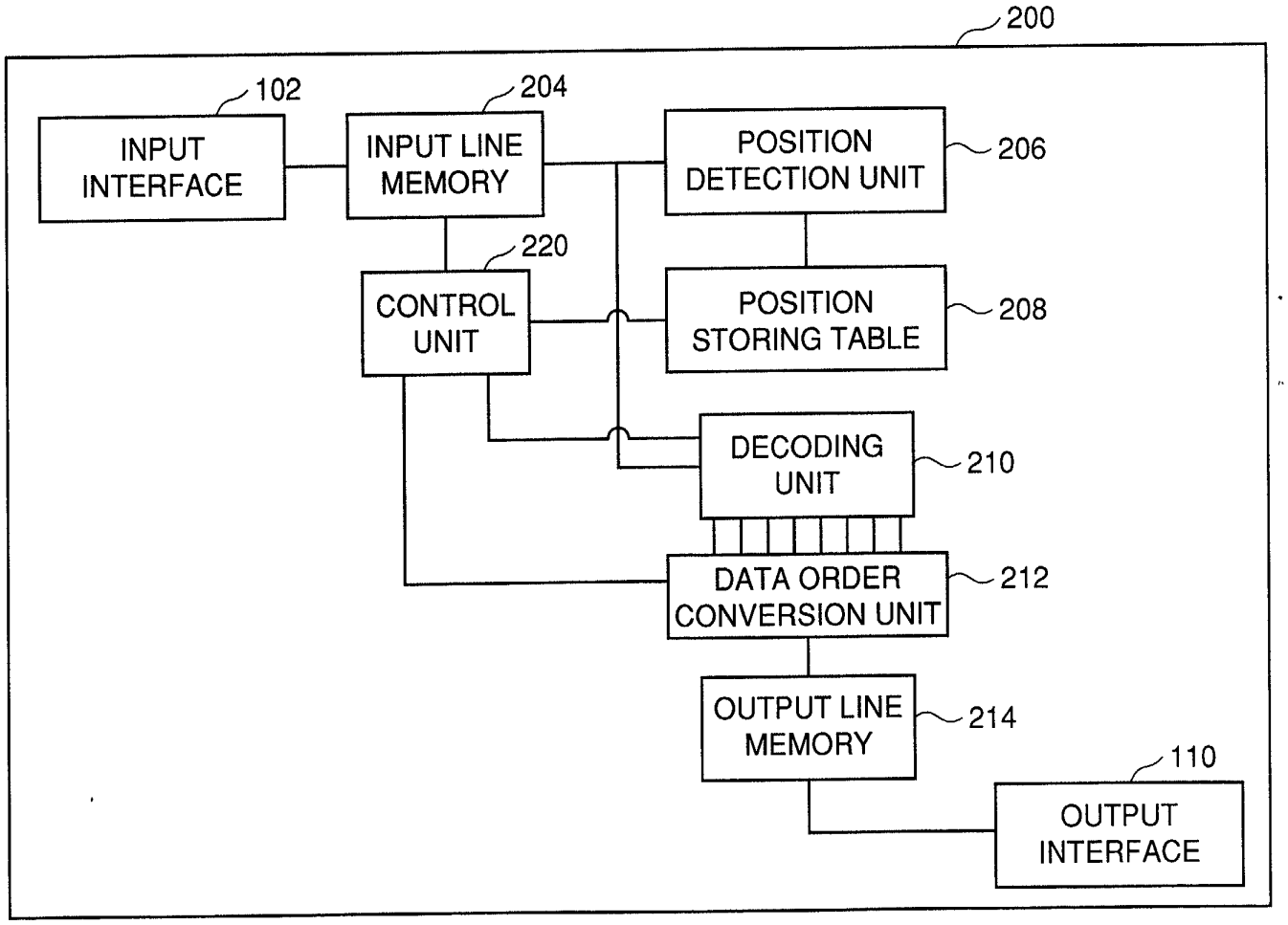
200
102
INPUT INTERFACE
204
INPUT LINE MEMORY
POSITION DETECTION UNIT
206
220
CONTROL UNIT
POSITION STORING TABLE
208
DECODING UNIT
210
DATA ORDER CONVERSION UNIT
212
OUTPUT LINE MEMORY
214
110
OUTPUT INTERFACE

FIG. 9

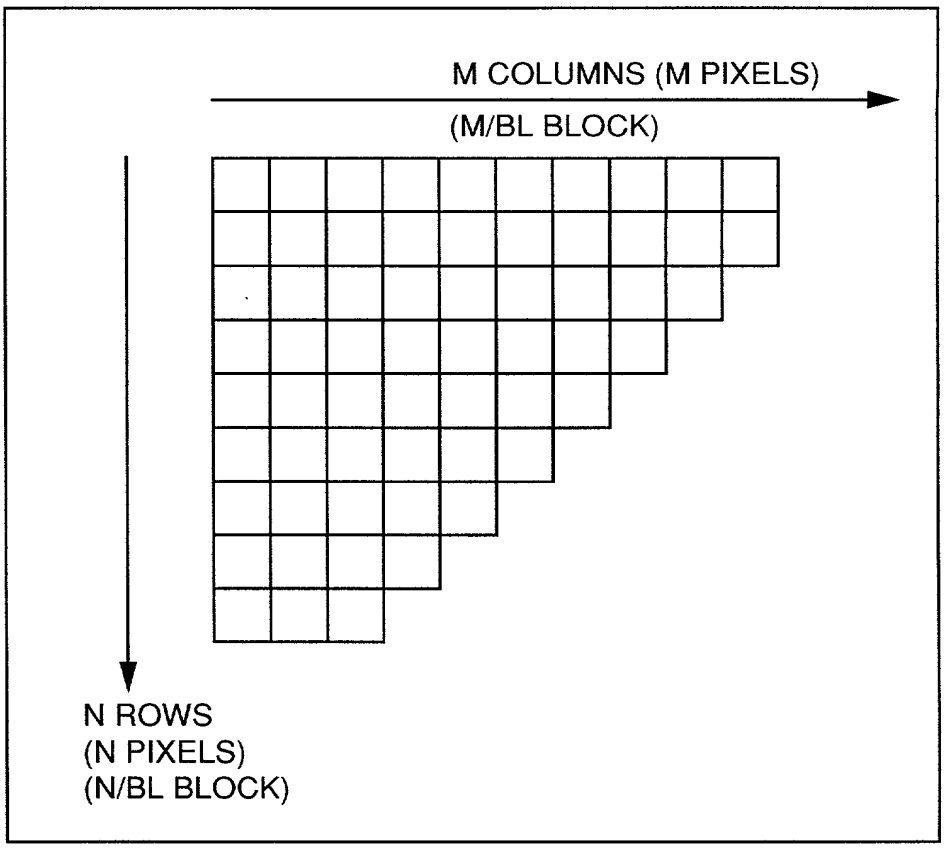
M COLUMNS (M PIXELS)
(M/BL BLOCK)
N ROWS
(N PIXELS)
(N/BL BLOCK)

FIG. 10

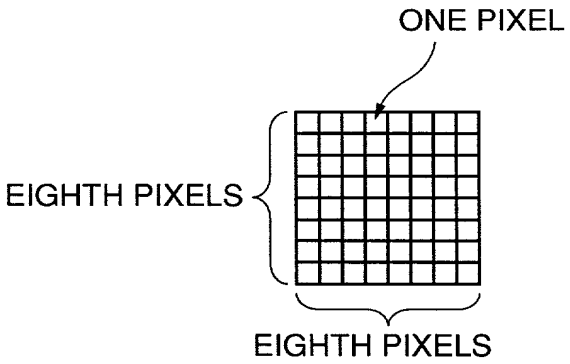
ONE PIXEL
EIGHTH PIXELS
EIGHTH PIXELS

FIG. 11

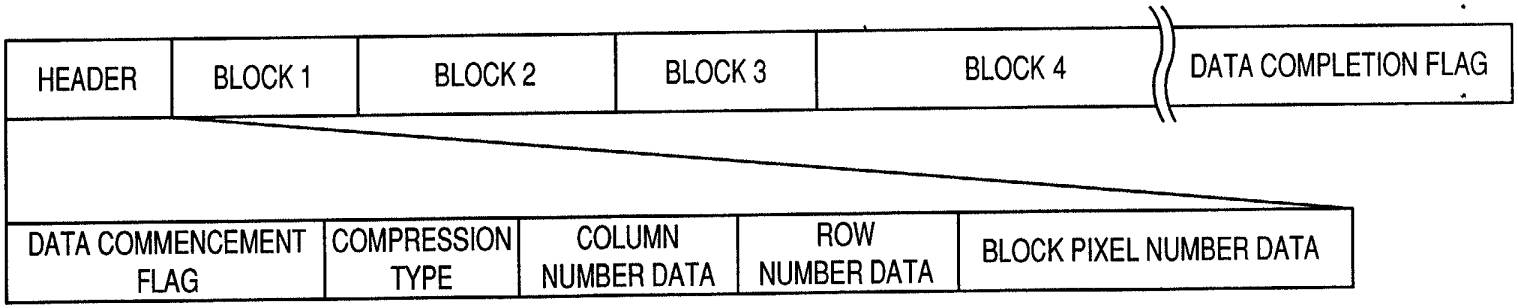
HEADER
BLOCK 1
BLOCK 2
BLOCK 3
BLOCK 4
DATA COMPLETION FLAG
DATA COMMENCEMENT FLAG
COMPRESSION TYPE
COLUMN NUMBER DATA
ROW NUMBER DATA
BLOCK PIXEL NUMBER DATA

FIG. 12

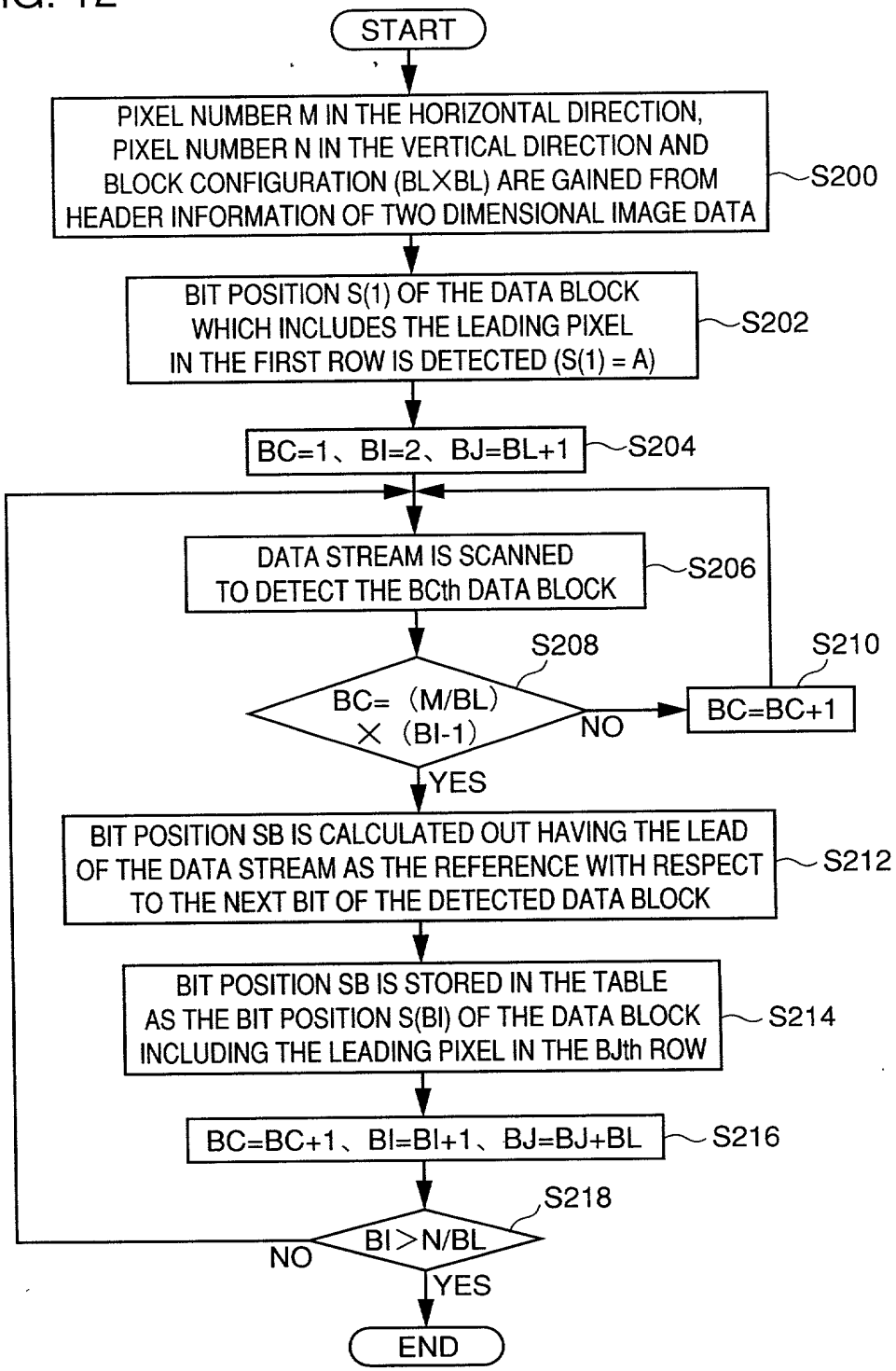
START
PIXEL NUMBER M IN THE HORIZONTAL DIRECTION, PIXEL NUMBER N IN THE VERTICAL DIRECTION AND BLOCK CONFIGURATION (BL×BL) ARE GAINED FROM HEADER INFORMATION OF TWO DIMENSIONAL IMAGE DATA
S200
BIT POSITION S(1) OF THE DATA BLOCK WHICH INCLUDES THE LEADING PIXEL IN THE FIRST ROW IS DETECTED (S(1) = A)
S202
BC=1、BI=2、BJ=BL+1
S204
DATA STREAM IS SCANNED TO DETECT THE BCth DATA BLOCK
S206
S208
BC= (M/BL) × (BI-1)
NO
S210
BC=BC+1
YES
BIT POSITION SB IS CALCULATED OUT HAVING THE LEAD OF THE DATA STREAM AS THE REFERENCE WITH RESPECT TO THE NEXT BIT OF THE DETECTED DATA BLOCK
S212
BIT POSITION SB IS STORED IN THE TABLE AS THE BIT POSITION S(BI) OF THE DATA BLOCK INCLUDING THE LEADING PIXEL IN THE BJth ROW
S214
BC=BC+1、BI=BI+1、BJ=BJ+BL
S216
S218
BI>N/BL
NO
YES
END

FIG. 13

NUMBER BI	NUMBER OF ROWS BJ (BL = 8) (N = 320)	POSITION INFORMATION BIT POSITION OF THE DATA BLOCK WHICH INCLUDES THE LEADING PIXEL IN THE BJth ROW (LEADING REFERENCE OF THE DATA STREAM)
1	1	S(1) = Ath BIT
2	9	S(2) = Bth BIT
3	17	S(3) = Cth BIT
4	25	S(4) = Dth BIT
...	...	...
BI	(BI-1)×8+1	S(BI) = Xth BIT
...	...	...
40	313	S(40) = Yth BIT

FIG. 14

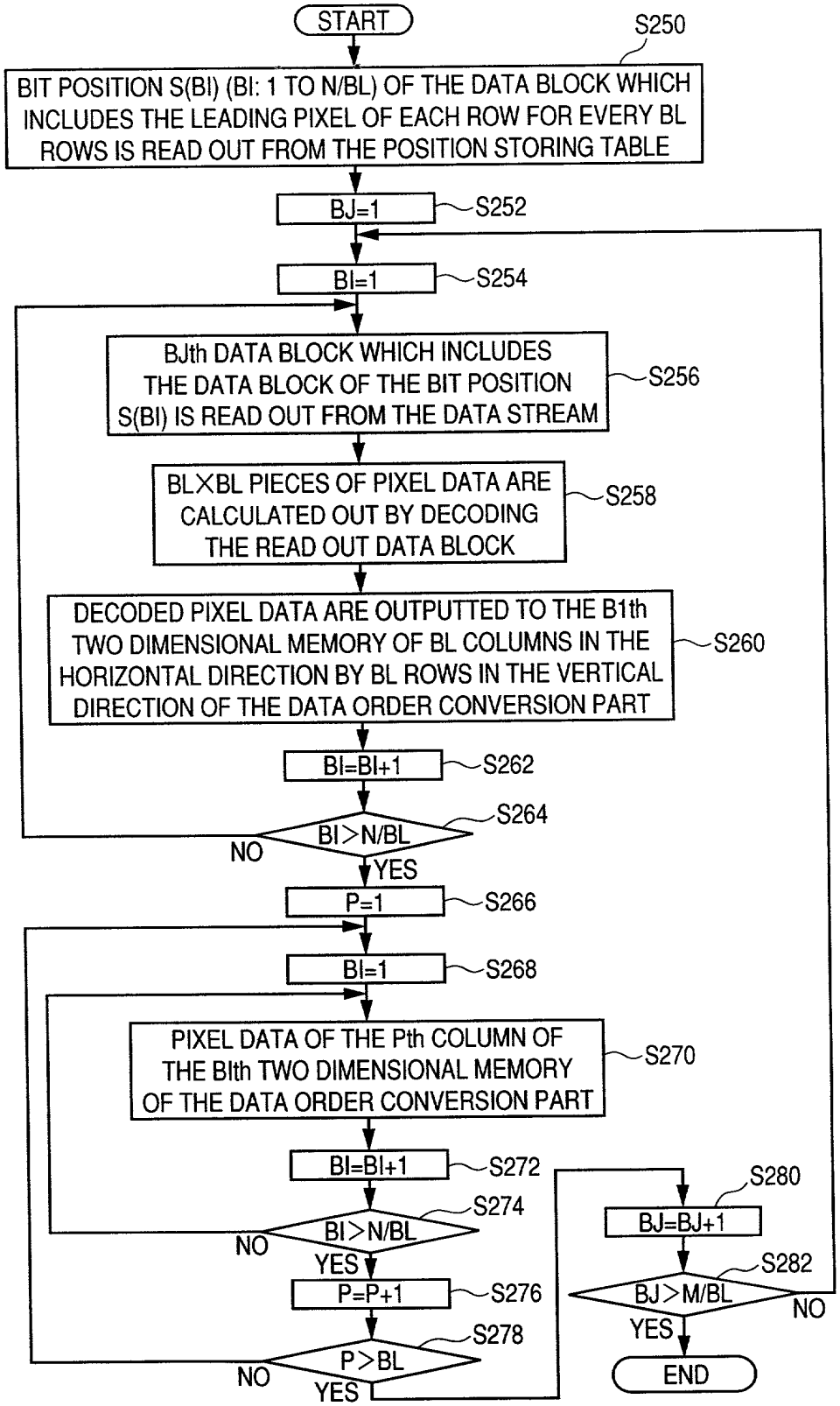
START
S250
BIT POSITION S(BI) (BI: 1 TO N/BL) OF THE DATA BLOCK WHICH INCLUDES THE LEADING PIXEL OF EACH ROW FOR EVERY BL ROWS IS READ OUT FROM THE POSITION STORING TABLE
BJ=1
S252
BI=1
S254
BJth DATA BLOCK WHICH INCLUDES THE DATA BLOCK OF THE BIT POSITION S(BI) IS READ OUT FROM THE DATA STREAM
S256
BL×BL PIECES OF PIXEL DATA ARE CALCULATED OUT BY DECODING THE READ OUT DATA BLOCK
S258
DECODED PIXEL DATA ARE OUTPUTTED TO THE B1th TWO DIMENSIONAL MEMORY OF BL COLUMNS IN THE HORIZONTAL DIRECTION BY BL ROWS IN THE VERTICAL DIRECTION OF THE DATA ORDER CONVERSION PART
S260
BI=BI+1
S262
BI>N/BL
S264
NO
YES
P=1
S266
BI=1
S268
PIXEL DATA OF THE Pth COLUMN OF THE BIth TWO DIMENSIONAL MEMORY OF THE DATA ORDER CONVERSION PART
S270
BI=BI+1
S272
BI>N/BL
S274
NO
YES
P=P+1
S276
P>BL
S278
NO
YES
BJ=BJ+1
S280
BJ>M/BL
S282
NO
YES
END

FIG. 15

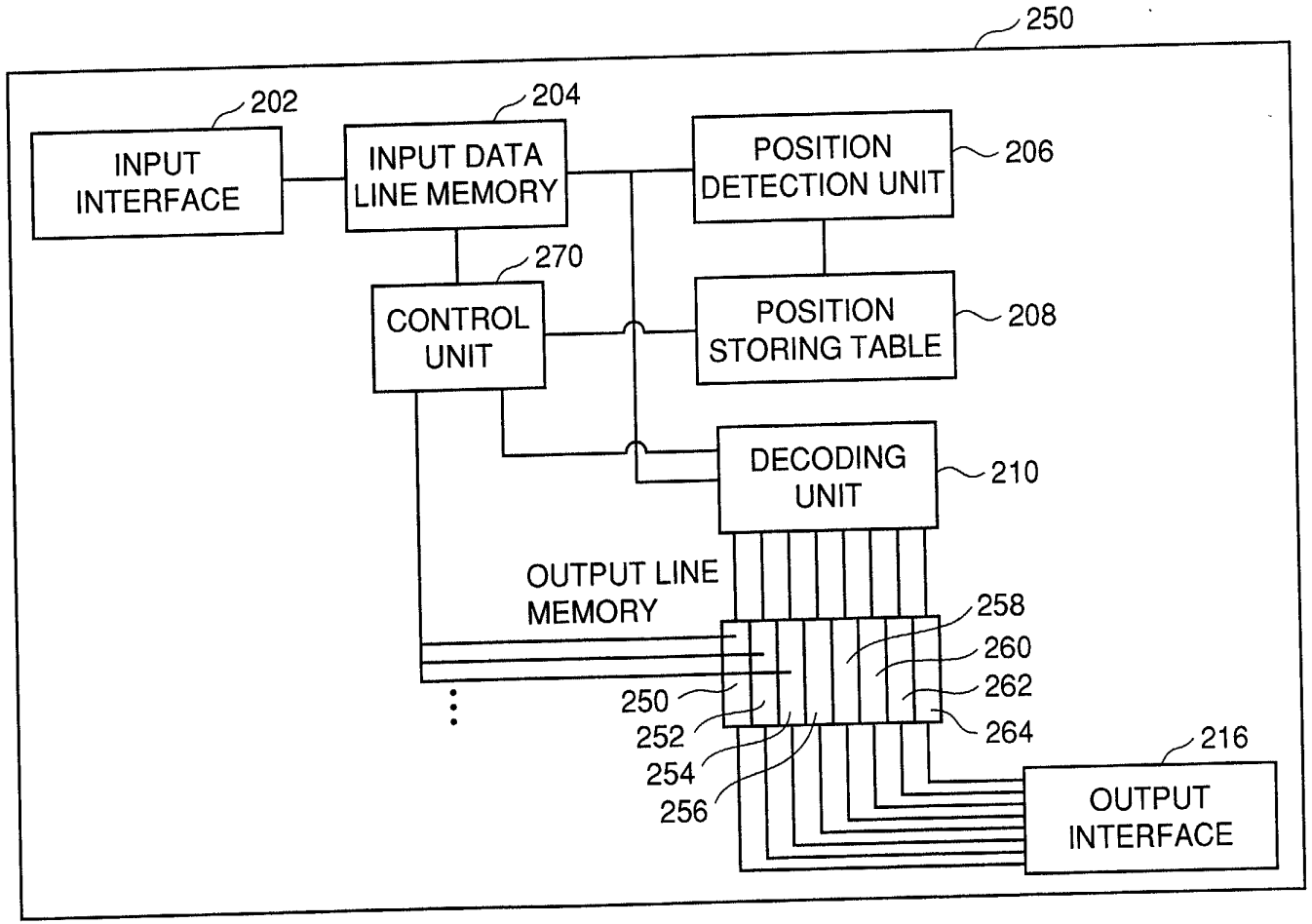
250
202
INPUT INTERFACE
204
INPUT DATA LINE MEMORY
POSITION DETECTION UNIT
206
270
CONTROL UNIT
POSITION STORING TABLE
208
DECODING UNIT
210
OUTPUT LINE MEMORY
258
260
262
264
250
252
254
256
216
OUTPUT INTERFACE

FIG. 16

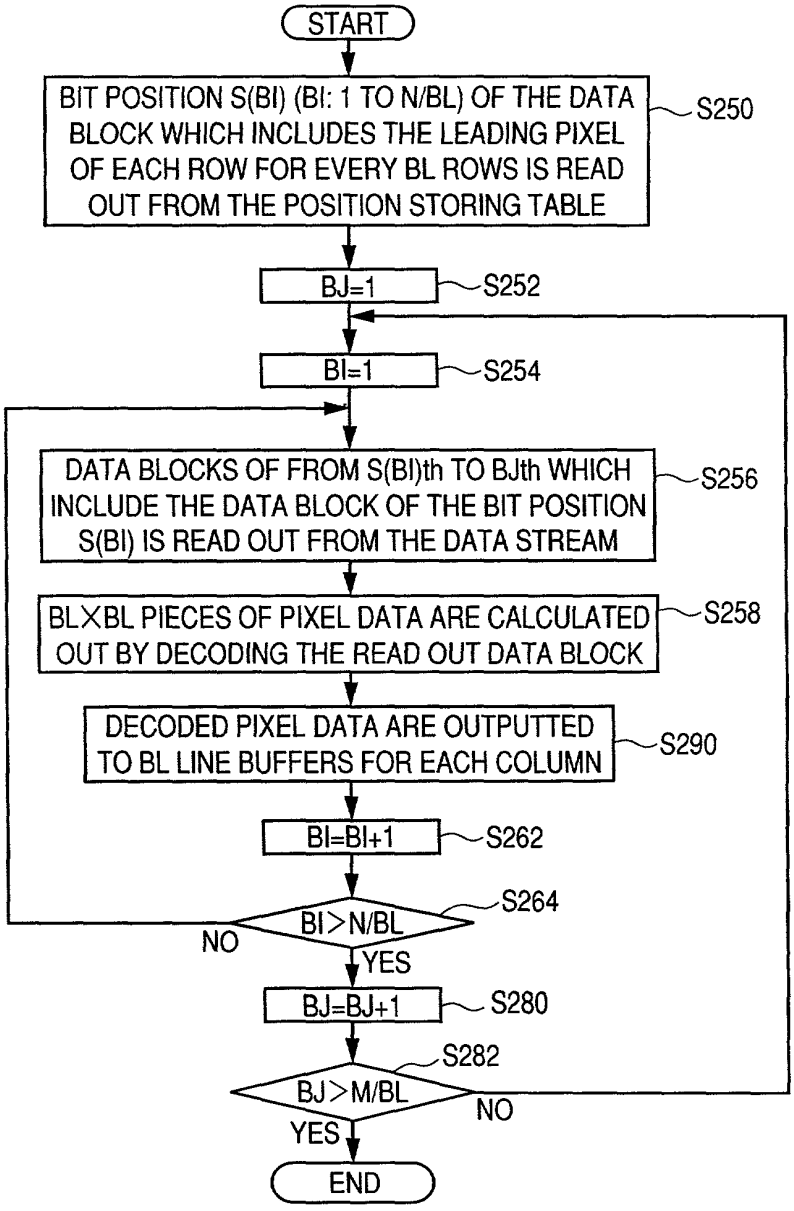
START
BIT POSITION S(BI) (BI: 1 TO N/BL) OF THE DATA BLOCK WHICH INCLUDES THE LEADING PIXEL OF EACH ROW FOR EVERY BL ROWS IS READ OUT FROM THE POSITION STORING TABLE
S250
BJ=1
S252
BI=1
S254
DATA BLOCKS OF FROM S(BI)th TO BJth WHICH INCLUDE THE DATA BLOCK OF THE BIT POSITION S(BI) IS READ OUT FROM THE DATA STREAM
S256
BL×BL PIECES OF PIXEL DATA ARE CALCULATED OUT BY DECODING THE READ OUT DATA BLOCK
S258
DECODED PIXEL DATA ARE OUTPUTTED TO BL LINE BUFFERS FOR EACH COLUMN
S290
BI=BI+1
S262
BI>N/BL
S264
NO
YES
BJ=BJ+1
S280
BJ>M/BL
S282
NO
YES
END

FIG. 17

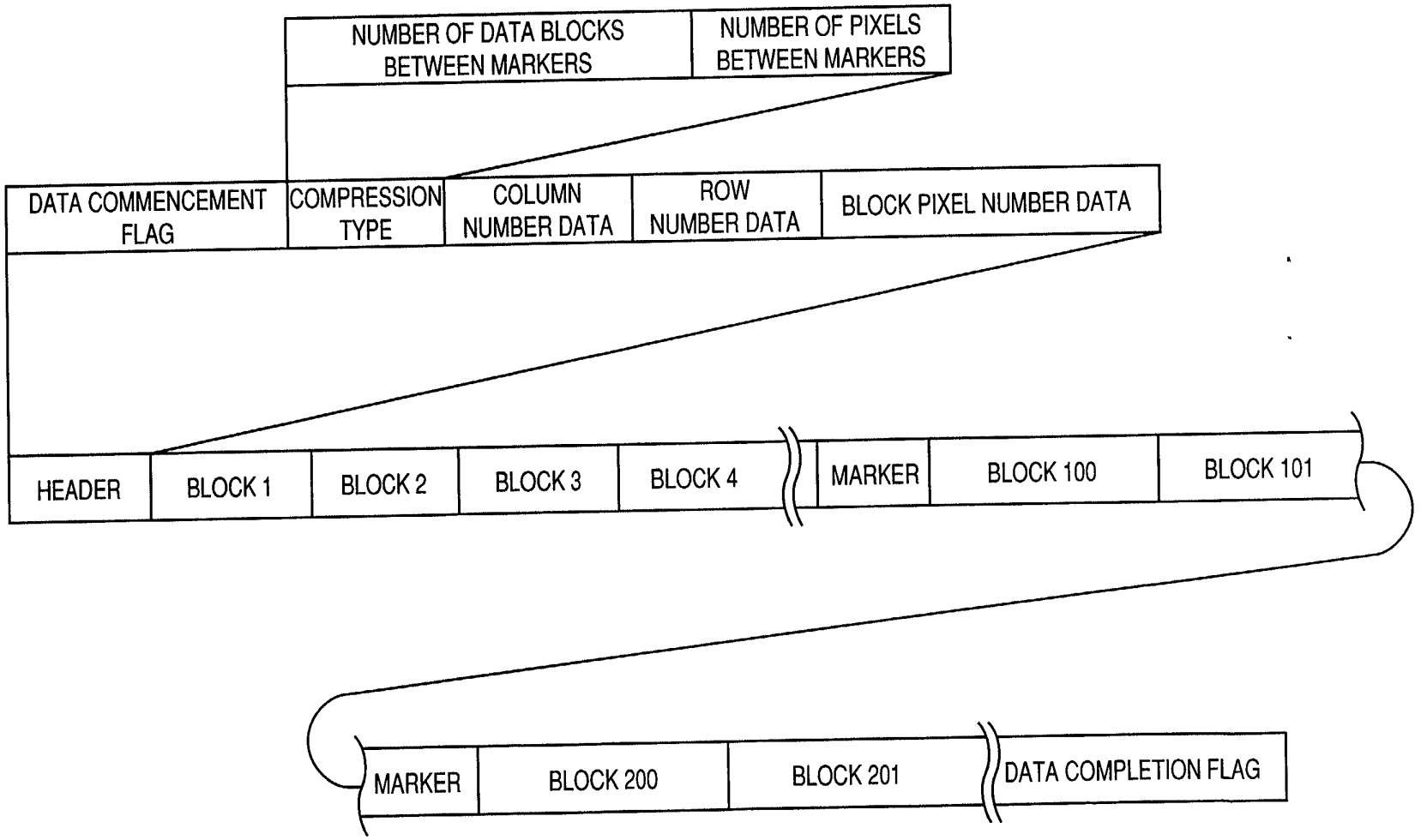
NUMBER OF DATA BLOCKS BETWEEN MARKERS
NUMBER OF PIXELS BETWEEN MARKERS
DATA COMMENCEMENT FLAG
COMPRESSION TYPE
COLUMN NUMBER DATA
ROW NUMBER DATA
BLOCK PIXEL NUMBER DATA
HEADER
BLOCK 1
BLOCK 2
BLOCK 3
BLOCK 4
MARKER
BLOCK 100
BLOCK 101
MARKER
BLOCK 200
BLOCK 201
DATA COMPLETION FLAG

FIG. 18

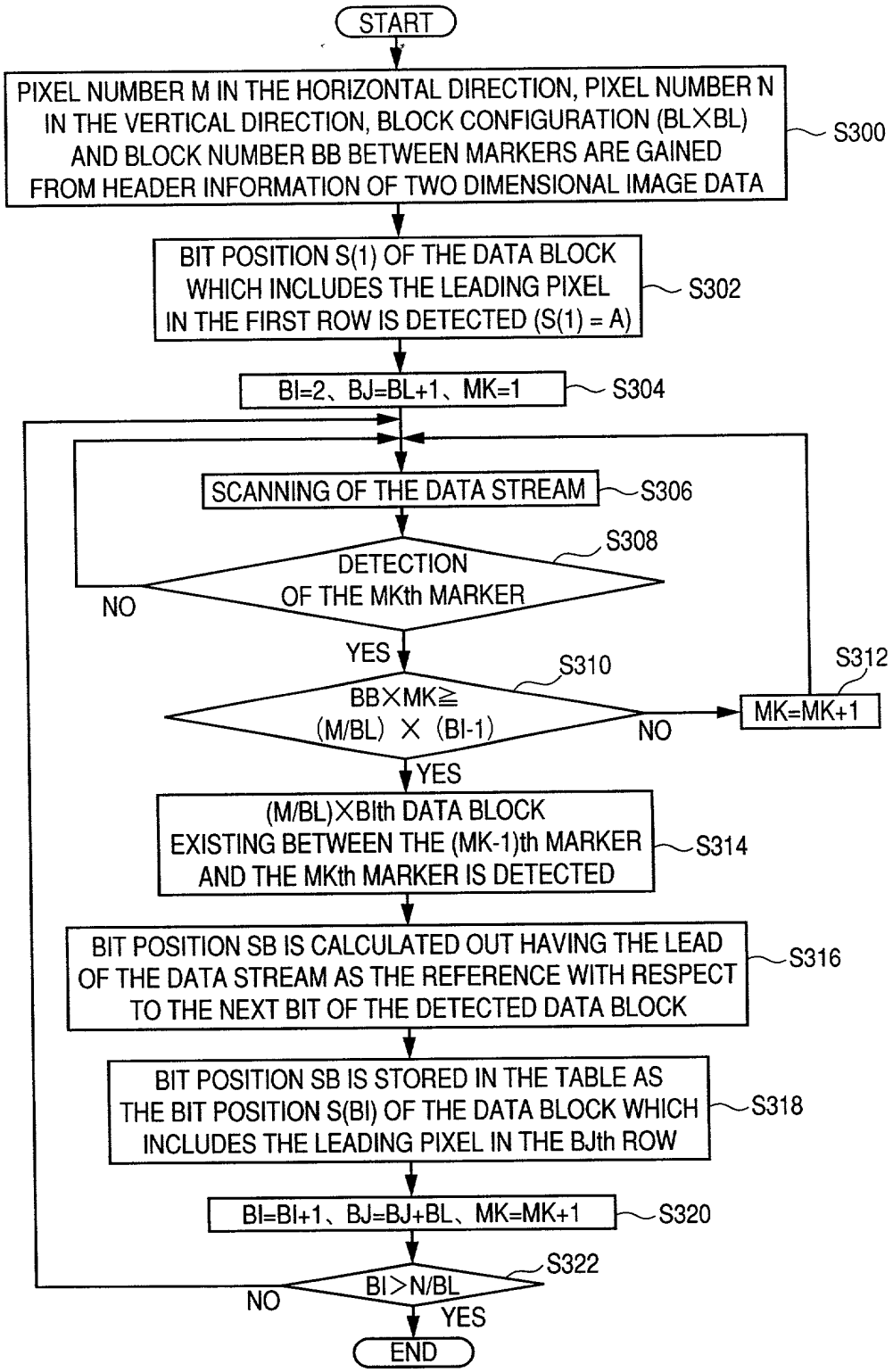
START
PIXEL NUMBER M IN THE HORIZONTAL DIRECTION, PIXEL NUMBER N IN THE VERTICAL DIRECTION, BLOCK CONFIGURATION (BL×BL) AND BLOCK NUMBER BB BETWEEN MARKERS ARE GAINED FROM HEADER INFORMATION OF TWO DIMENSIONAL IMAGE DATA
S300
BIT POSITION S(1) OF THE DATA BLOCK WHICH INCLUDES THE LEADING PIXEL IN THE FIRST ROW IS DETECTED (S(1) = A)
S302
BI=2、BJ=BL+1、MK=1
S304
SCANNING OF THE DATA STREAM
S306
DETECTION OF THE MKth MARKER
S308
NO
YES
BB×MK≧ (M/BL) × (BI-1)
S310
NO
MK=MK+1
S312
YES
(M/BL)×BIth DATA BLOCK EXISTING BETWEEN THE (MK-1)th MARKER AND THE MKth MARKER IS DETECTED
S314
BIT POSITION SB IS CALCULATED OUT HAVING THE LEAD OF THE DATA STREAM AS THE REFERENCE WITH RESPECT TO THE NEXT BIT OF THE DETECTED DATA BLOCK
S316
BIT POSITION SB IS STORED IN THE TABLE AS THE BIT POSITION S(BI) OF THE DATA BLOCK WHICH INCLUDES THE LEADING PIXEL IN THE BJth ROW
S318
BI=BI+1、BJ=BJ+BL、MK=MK+1
S320
BI>N/BL
S322
NO
YES
END

FIG. 19

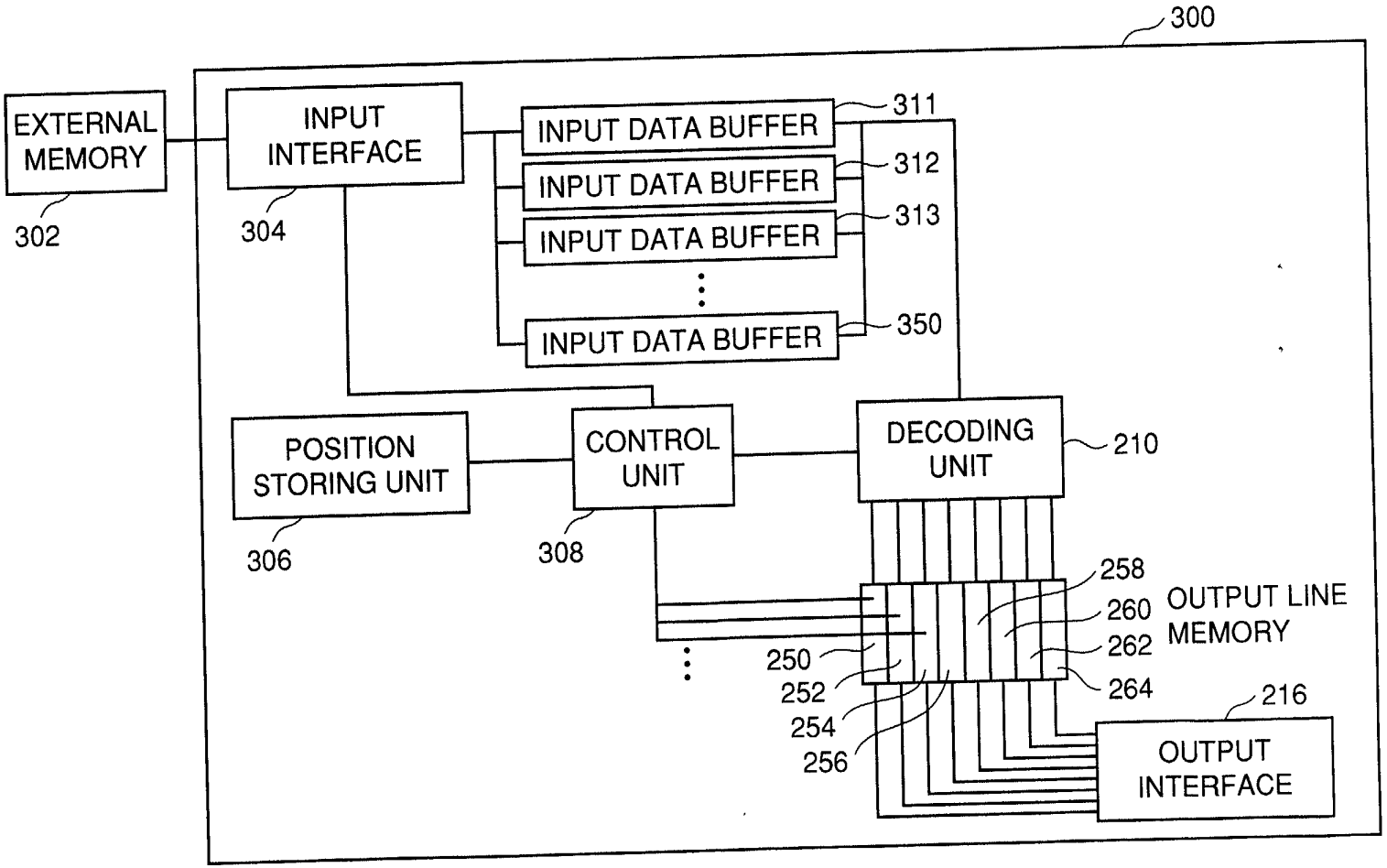
300
EXTERNAL MEMORY
302
INPUT INTERFACE
304
INPUT DATA BUFFER
311
INPUT DATA BUFFER
312
INPUT DATA BUFFER
313
INPUT DATA BUFFER
350
POSITION STORING UNIT
306
CONTROL UNIT
308
DECODING UNIT
210
258
260
262
264
OUTPUT LINE MEMORY
250
252
254
256
216
OUTPUT INTERFACE

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FIG. 20

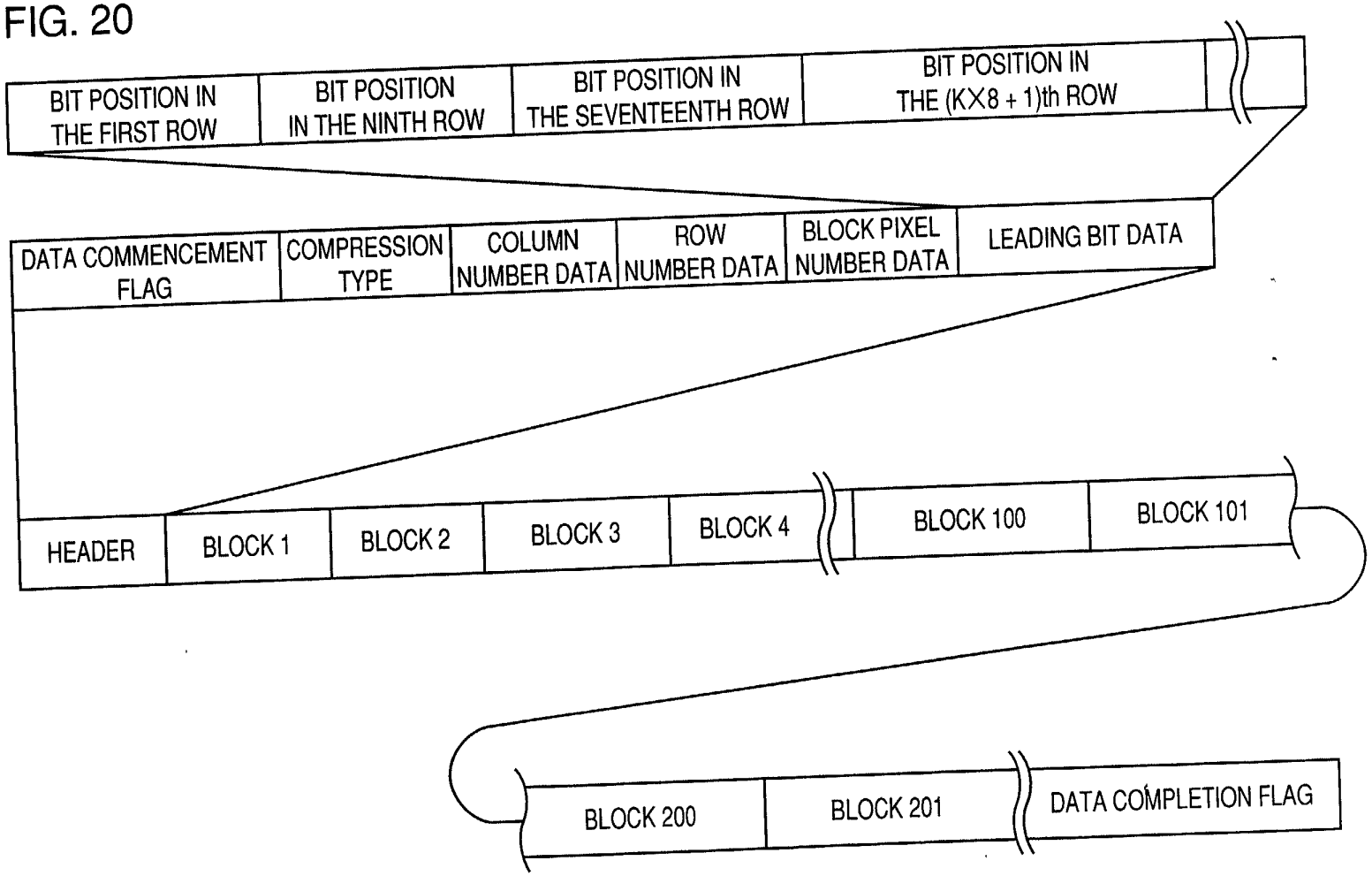


FIG. 21

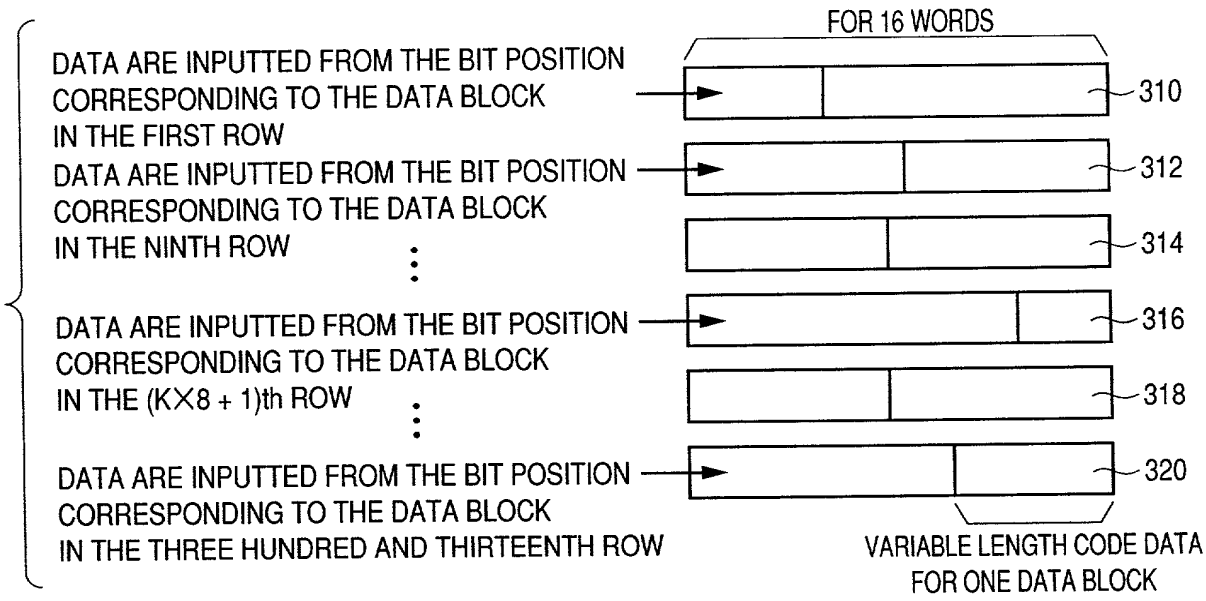
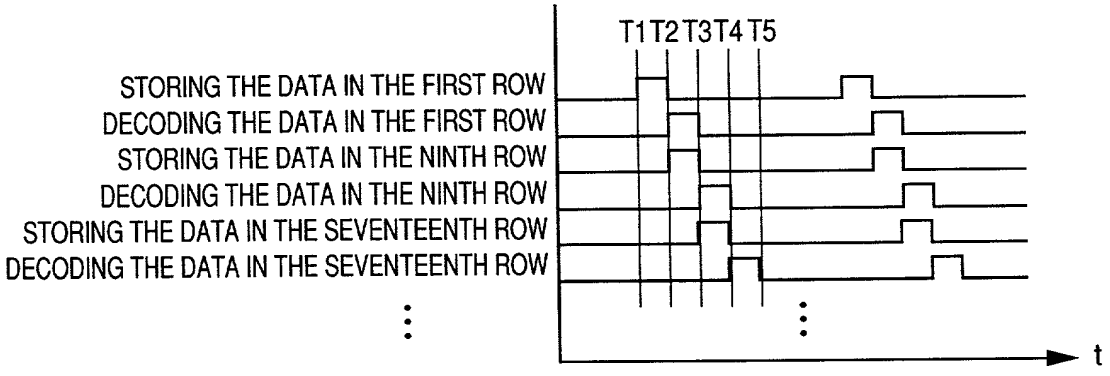

FOR 16 WORDS
DATA ARE INPUTTED FROM THE BIT POSITION CORRESPONDING TO THE DATA BLOCK IN THE FIRST ROW
DATA ARE INPUTTED FROM THE BIT POSITION CORRESPONDING TO THE DATA BLOCK IN THE NINTH ROW
DATA ARE INPUTTED FROM THE BIT POSITION CORRESPONDING TO THE DATA BLOCK IN THE (KX8 + 1)th ROW
DATA ARE INPUTTED FROM THE BIT POSITION CORRESPONDING TO THE DATA BLOCK IN THE THREE HUNDRED AND THIRTEENTH ROW
310
312
314
316
318
320
VARIABLE LENGTH CODE DATA FOR ONE DATA BLOCK

FIG. 22


T1 T2 T3 T4 T5
STORING THE DATA IN THE FIRST ROW
DECODING THE DATA IN THE FIRST ROW
STORING THE DATA IN THE NINTH ROW
DECODING THE DATA IN THE NINTH ROW
STORING THE DATA IN THE SEVENTEENTH ROW
DECODING THE DATA IN THE SEVENTEENTH ROW
t